

REMARKS

This Response is responsive to the Office Action mailed by the Office on July 2, 2004. Claims 1-31 were pending in the application. Claim 30 is allowed. Claims 1-6, 11, 15-24, 26-29, and 31 stand rejected. Claims 7-10, 12-14, and 25 are objected to but would be allowable if rewritten in independent form, incorporating the limitations of the base claim and any intervening claims.

Claims 1, 3-6, and 20 stand rejected under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent No. 6,373,491 to Sasaki (hereinafter “Sasaki”). Claims 2, 11, 15-19, 21-24, 26-29, and 31 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Sasaki in further view of U.S. Patent No. 6,556,198 to Nishikawa (hereinafter “Nishikawa”).

Applicants have amended claims 1, 7, 11, 12, 16-19, and 21-24 and cancelled claims 2, 20, 25, and 31. Applicant has also amended the specification to correct several typographical errors. No new matter has been added by these amendments and support for the amendments may be found in the specification and claims as originally filed. After these amendments, claims 1, 3-19, 21-24, and 26-30 are pending in the application.

Applicants respectfully traverse the rejections. Reconsideration of this application is respectfully requested.

I. Claims 1, 3-6, and 20

Claims 1, 3-6, and 20 stand rejected under 35 U.S.C. § 102(b) as unpatentable over Sasaki. Applicant has amended claims 1 and 20. Claim 1, as amended, incorporates the elements of claim 2. Claim 2 has been cancelled. Before these amendments, claim 2 depended from claim 1. The rejection of claim 1 is rendered moot by these amendments. The rejection of claim 2 is now applicable to claim 1, as amended, and is addressed in section II below.

Claims 3-6 depend from claim 1. Thus, the rejection of claims 3-6 under 35 U.S.C. § 102(b) is rendered moot as well.

Claim 20 has been cancelled. Thus, the rejection of claim 20 has been rendered moot.

Applicant respectfully request that the Examiner withdraw the rejection of claims 1, 3-6, and 20 under 35 U.S.C. § 102(e).

II. Claims 2, 11, 15-19, 21-24, 26-29, and 31

Claims 2, 11, 15-19, 21-24, 26-29, and 31 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Sasaki in further view of Nishikawa. To establish a prima facie case of obviousness, there must be some suggestions or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Further, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See, MPEP 2142. Applicants respectfully assert that Sasaki in further view of Nishikawa does not support a prima facie case of obviousness, as is required by MPEP §2142.

Claim 2 has been cancelled. However, claim 2 depended from claim 1, and claim 1 has been amended to incorporate the elements of claim 2. In claim 1, as amended, Applicants claim, “determining a target point corresponding to a point having a maximum estimated error within the first estimated relationship between the plurality of points.” Neither Sasaki nor Nishikawa teaches or suggests, “determining a target point corresponding to a point having a maximum estimated error within the first estimated relationship between the plurality of points.”

In the office action, the “maximum estimated error” is equated to the “farthest point” described in Nishikawa. Office Action, page 4. But Nishikawa is not describing a maximum estimated error. Nishikawa describes a process of generating a polyhedron enveloping a sequence of points. Abstract. The process for generating the polyhedron that is cited in the Office Action comprises forming an octahedron utilizing points in the polyhedron, eliminating the points that are contained within the planes of the octahedron, selecting an existing point of the polyhedron that is outside of the octahedron and farthest from a plane of the octahedron, building a tetrahedron that comprises the plane of the octahedron and the farthest point, and eliminating the points of the polyhedron that lie within the tetrahedron. Column 9, lines 1-34. The process of building the tetrahedron and eliminating points within the tetrahedron is repeated for each plane of the octahedron.

Column 9, lines 34-36. Eliminating the points within the octahedron and corresponding tetrahedrons increases the speed of generating the polyhedron. Col. 9, lines 53-56. The farthest point is not a “maximum estimated error.”

Thus, neither Sasaki nor Nishikawa teaches or suggests, “determining a target point corresponding to a point having a maximum estimated error within the first estimated relationship between the plurality of points.” Accordingly, claim 1, as amended, is patentable over Sasaki in view of Nishikawa. Applicants respectfully request that the Examiner withdraw the rejection of claim 1 under 35 U.S.C. § 103(a).

Claims 3-6, 11, 13, and 15 depend from claim 1 and are allowable for at least the same reasons. Applicants respectfully request that the Examiner withdraw the rejection of claims 3-6, 11, 13, and 15.

In claim 16, as amended, Applicant claim a method comprising “automatically determining whether further measurements are required based on the estimated normal vector data in combination with predetermined measurement criteria comprising error limitations.” Neither Sasaki nor Nishikawa teaches or suggests, “automatically determining whether further measurements are required based on the estimated normal vector data in combination with predetermined measurement criteria comprising error limitations.” Accordingly, claim 16, as amended, is patentable over Sasaki in view of Nishikawa. Applicants respectfully request that the Examiner withdraw the rejection of claim 16.

Claims 17 and 18 depend from claim 16 and are allowable for at least the same reasons. Applicants respectfully request that the Examiner withdraw the rejection of claims 17 and 18.

In claim 19, as amended, Applicants claim a method comprising “removing data from a plurality of coordinate data and normal vector... wherein the data is removed based on error limitations.” Neither Sasaki nor Nishikawa teaches or suggests, “removing data from a plurality of coordinate data and normal vector... wherein the data is removed based on error limitations.” Accordingly, claim 19, as amended, is patentable over Sasaki in view of Nishikawa. Applicants respectfully request that the Examiner withdraw the rejection of claim 19.

In claim 21, as amended, Applicants claim a computer-readable medium comprising “an adaptive sampling module operative to automatically determine whether further measurements are required based on the estimated normal vector data in combination with predetermined measurement criteria comprising error limitations.” Neither Sasaki nor Nishikawa teaches or suggests, “an adaptive sampling module operative to automatically determine whether further measurements are required based on the estimated normal vector data in combination with predetermined measurement criteria comprising error limitations.” Accordingly, claim 21, as amended, is patentable over Sasaki in view of Nishikawa. Applicants respectfully request that the Examiner withdraw the rejection of claim 21.

Claims 22 and 23 depend from claim 21 and are allowable for at least the same reasons. Applicants respectfully request that the Examiner withdraw the rejection of claims 22 and 23.

Claim 25 was objected to in the Office Action but would be allowable if rewritten in independent form, incorporating all of the limitations of the base claim. Claim 25 depended from claim 24. Applicants have amended claim 24 to incorporate the elements of claim 25 and cancelled claim 25. Accordingly, claim 24, as amended, is allowable. Applicants respectfully request that the Examiner withdraw the rejection of claim 24.

Claims 26-29 depend from claim 24 and are allowable for at least the same reasons. Applicants respectfully request that the Examiner withdraw the rejection of claims 26-29.

Applicants have cancelled claim 31. Accordingly, the rejection of claim 31 is moot.

III. Claim 30

Applicants appreciate the allowance of claim 30.

IV. Claims 7-10, 12, 14, and 25

Claims 7-10, 12-14, and 25 are objected to but would be allowable if rewritten in independent form, incorporating the limitations of the base claim and any intervening

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claims. Claims 7-10, 12, and 14 depend from claim 1. As discussed in section II above, claim 1, as amended, is allowable. Claims 7-10, 12, and 14 are allowable for at least the reasons discussed in relation to claim 1. Applicants respectfully request that the Examiner withdraw the objections to claims 7-10, 12, and 14.

Claim 25 has been cancelled. Accordingly, the rejection of claim 25 is moot and Applicants respectfully request that the Examiner withdraw the objection to claim 25.

VIII. Conclusion

Applicants submit that all pending claims, 1, 3-19, 21-24, and 26-30, are in condition for allowance and respectfully solicit a Notice of Allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of the application, the Examiner is invited to contact the undersigned at (336) 607-7311 to discuss any matter related to the application.

Respectfully submitted,

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